

Attorney Docket No.: 0190131
Application Serial No.: 09/816,038

REMARKS

After the present amendment, claims 1-25 remain pending in the present application. The Examiner has rejected claims 1-3, 7-9, and 14-16. The Examiner has objected to claims 4-6, 10-13, and 17. Claims 1, 7, 14, and 17 have been amended by way of the present amendment. Claims 18-25 have been added by way of the present amendment and correspond, respectively, to allowable claims 4-6, 10-13, and 17. Allowable claim 4 has been rewritten as new independent claim 18 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 5 has been rewritten as new independent claim 19 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 6 has been rewritten as new independent claim 20 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 10 has been rewritten as new independent claim 21 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 11 has been rewritten as new independent claim 22 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 12 has been rewritten as new independent claim 23 which includes all of the limitations of the base claim and any intervening claims, while new dependent claim 24 corresponds to allowable dependent claim 13. Allowable claim 17 has been rewritten as new independent claim 25 which includes all of the limitations of the base claim and any intervening claims. Thus, new claims 18-25 are allowable according to the Examiner's comments in the Office Action. Reconsideration and allowance of outstanding claims 1-25 in view of the above amendments and following remarks are requested.

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A. Rejection of Claims 1-3 and 7-9 under 35 USC §102(e)

The Examiner has rejected claims 1-3 and 7-9 under 35 USC §102(e) as being anticipated by U.S. Patent Number 6,195,127 B1 to Sugimoto ("Sugimoto"). For the reasons discussed below, Applicants respectfully submit that the present invention, as defined by amended independent claims 1 and 7, is patentably distinguishable over Sugimoto.

In embodiments according to the present invention, a strobe lighting system is used for capturing digital images. In conventional approaches, supplemental light (e.g., a flash) is often utilized with an image sensor to provide additional lighting to illuminate a subject. However, problems exist when too much light or not enough light is reflected from the subject. Moreover, attempts at modifying the duration of the supplemental light have often proved to be inadequate, producing images of inferior quality in a relatively long time span.

Embodiments according to the present invention, as defined by amended independent claims 1 and 7, relate to generating preparatory light for a predetermined preparatory duration. An average preparatory image luminance of the preparatory image represented by preparatory image data is determined based on the preparatory image data and weighting at least a subset of the preparatory image data. For example, in one embodiment the foreground may be weighted more heavily than the background in order to produce a higher quality image.

A supplemental strobe duration is then generated based on the average preparatory image luminance and luminance weightings. Advantageously, the generation of the supplemental strobe duration is performed using a single preparatory image captured while generating the preparatory light.

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In contrast, Sugimoto teaches a less advanced system, comprising a digital camera including a flash lamp and a charge-coupled device (CCD) imager. Disadvantageously, a microcomputer must capture a first image without a light-emission of the flash lamp, and then capture a second image after instructing the flash lamp to perform a preliminary light-emission, exposing the CCD imager for 1/1500 of a second. The microcomputer then calculates a major light-emission amount of the flash lamp on the bases of two luminance evaluation values obtained from the two captured images.

Sugimoto does not disclose, teach, or even suggest generation of the supplemental strobe duration using a single preparatory image captured while generating the preparatory light. Thus, embodiments according to the present invention effectively eliminate one of the capturing or exposing steps required in Sugimoto.

For the foregoing reasons, Applicants respectfully submit that the present invention as defined by amended independent claims 1 and 7 is not taught, disclosed, or suggested by Sugimoto. Thus, amended independent claims 1 and 7 are patentably distinguishable over Sugimoto. As such, the claims depending from amended independent claims 1 and 7 are, *a fortiori*, also patentably distinguishable over Sugimoto for at least the reasons presented above and also for additional limitations contained in each dependent claim.

B. Rejection of Claims 14-16 under 35 USC §103(a)

The Examiner has rejected claims 14-16 under 35 USC §103(a) as being obvious with respect to Sugimoto and U.S. Patent Number 5,987,261 to Sugahara, et al. ("Sugahara"). For the

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reasons discussed below, Applicants respectfully submit that the present invention, as defined by amended independent claim 14, is patentably distinguishable over Sugimoto and Sugahara.

As discussed herein and as defined by amended independent claim 14, advantageously, the generation of the supplemental strobe duration is performed using a single preparatory image captured while generating the preparatory light. In contrast, Sugimoto does not disclose, teach, or even suggest generation of the supplemental strobe duration using a single preparatory image captured while generating the preparatory light. Thus, embodiments according to the present invention effectively eliminate one of the exposing steps of Sugimoto.

Sugahara does not cure the deficiencies of Sugimoto. Sugahara simply discloses a strobe device for generating a fixed amount of preparatory light a plurality of times. Sugahara also teaches obtaining an optimum amount of light. Sugahara, singly or in combination, does not disclose, teach, or suggest "an image sensor coupled to a memory, where a supplemental strobe duration stored in the memory is generated from a single preparatory image received at the processor from the image sensor when the strobe is activated to generate a preparatory light for a predetermined preparatory duration."

For the foregoing reasons, Applicants respectfully submit that the present invention as defined by amended independent claim 14 is not taught, disclosed, or suggested by Sugimoto and Sugahara. Thus, amended independent claim 14 is patentably distinguishable over Sugimoto and Sugahara. As such, the claims depending from amended independent claim 14 are, *a fortiori*, also patentably distinguishable over Sugimoto and Sugahara for at least the reasons presented above and also for additional limitations contained in each dependent claim.

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C. Allowable Subject Matter

The Examiner has objected to claims 4-6, 10-13, and 17 as being dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, allowable claim 4 has been rewritten as new independent claim 18 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 5 has been rewritten as new independent claim 19 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 6 has been rewritten as new independent claim 20 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 10 has been rewritten as new independent claim 21 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 11 has been re-written as new independent claim 22 which includes all of the limitations of the base claim and any intervening claims. Allowable claim 12 has been rewritten as new independent claim 23 which includes all of the limitations of the base claim and any intervening claims, while new dependent claim 24 corresponds to allowable dependent claim 13. Allowable claim 17 has been rewritten as new independent claim 25 which includes all of the limitations of the base claim and any intervening claims. Thus, new claims 18-25 have been added, which are allowable according to the Examiner's comments in the Office Action.

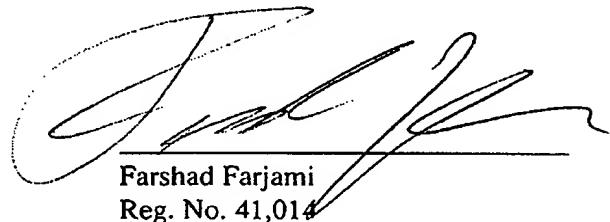
D. Conclusion

Based on the foregoing reasons, the present invention, as defined by amended independent claims 1, 7, and 14, and claims depending therefrom, is patentably distinguishable over the art cited by the Examiner. Thus, outstanding claims 1-17 are patentably distinguishable

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over the art cited by the Examiner. As such, and for all the foregoing reasons, an early allowance of outstanding claims 1-17 and an early Notice of Allowance directed to all claims 1-25 remaining in the present application are respectfully requested.

Respectfully Submitted,
FARJAMI & FARJAMI LLP



Date: 8/19/04
Farshad Farjami
Reg. No. 41,014

FARJAMI & FARJAMI LLP
26522 La Alameda Ave., Suite 360
Mission Viejo, California 92691
Telephone: (949) 282-1000
Facsimile: (949) 282-1002

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FARJAMI & FARJAMI LLP
AN INTELLECTUAL PROPERTY LAW FIRM

www.farjami.com

26522 La Alameda Avenue, Suite 360
Mission Viejo, California 92691
tel: (949) 282-1000
fax: (949) 282-1002

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